WHAT IS CLAIMED IS:

1. (original) A method of determining the level of susceptibility of a subject to an environmental toxin capable of detoxification by a glutathione S-transferase comprising:

a. determining a first amount of one or more glutathione S-transferases present in a biological sample from the subject;

b. contacting the biological sample with the environmental toxin;

c. determining a second amount of one or more glutathione S-transferases present in the sample;

wherein the second amount of one or more glutathione S-transferases being lower than or similar to the first amount of one or more glutathione S-transferases indicates the subject having a higher level of susceptibility than a subject having the second amount of one or more glutathione S-transferases higher than the first amount of one or more glutathione S-transferases, and wherein the second amount of one or more glutathione S-transferases being higher than the first amount of one or more glutathione S-transferases indicates the subject having a lower level of susceptibility than a subject having a second amount of one or more glutathione S-transferases lower than or similar to the first amount of one or more glutathione S-transferases.

2. (original) The method of claim 1 wherein the subject is a mammal.

3. (original) The method of claim 1 wherein the subject is a human.

4. (original) The method of claim 1 wherein the subject is a rodent.

5. (original) The method of claim 1 wherein the subject is a mouse.

6. (original) The method of claim 1 wherein the biological sample is selected from the group consisting of plasma, brain and urine.

7. (original) The method of claim 1 wherein the one or more glutathione S-transferases is composed of subunits selected from the group consisting of: alpha, mu, pi and omega subunits of glutathione S-transferase.

8. (original) The method of claim 1 wherein the one or more glutathione S-transferase is human glutathione S-transferase pi.

9. (original) The method of claim 1 wherein the environmental toxin is a toxin wherein the toxin or a metabolite thereof interferes with Complex I respiration in a cell's electron transport chain.

10. (original) The method of claim 1 wherein the environmental toxin is a toxin structurally similar to MPTP.

11. (original) The method of claim 1 wherein the environmental toxin is selected from the group consisting of MPTP, MPPT, rotenone and paraquat.

12. (original) The method of claim 1 wherein determining said first and second amounts of one or more glutathione S-transferases involve determining the amount of mRNA encoding said one or more glutathione S-transferases.

13. (original) The method of claim 1 wherein determining said first and second amounts of one or more glutathione S-transferases involve the step of determining said one or more glutathione S-transferases by the method selected from the group consisting of: radioimmunoassay, enzyme immunoassay and immunoflurometric immuno assay.

14. (original) The method of claim 12 wherein determining the amount of mRNA encoding said one or more glutathione S-transferases is determined using a primer selected from the group consisting of: SEQ ID NOS. 5-27, and SEQ ID NOS: 29-31, 33-35, 37-39, 40-43, 45-47, 49-51, 53-55, 57-59, 61-63, 65-67 and 69-71.

15. (original) The method of claim 1 wherein determining said first and second amounts of one or more of one or more glutathione S-transferases involves determining the level of enzymatic activity corresponding to one or more glutathione S-transferases.

16. (previously presented) A method of determining risk of developing Parkinson's disease in a human subject comprising:

a. determining a first amount of one or more glutathione S-transferases present in a biological sample from the subject;

b. contacting the biological sample with the environmental toxin;

c. determining a second amount of one or more glutathione S-transferases present in the sample;

wherein the second amount of one or more glutathione S-transferases being lower than or similar to the first amount of one or more glutathione S-transferases indicates the subject having a higher level of risk of developing Parkinson's disease than a subject having the second amount of one or more glutathione S-transferases higher than the first amount of one or more glutathione S-transferases, and wherein the second amount of one or more glutathione S-transferases being higher than the first amount of one or more glutathione S-transferases indicates the subject having a lower level of risk of developing Parkinson's disease than a subject having a second amount of the one or more glutathione S-transferases lower than or similar to the first amount of the one or more glutathione S-transferases.

17. (original) The method of claim 16 wherein the biological sample is selected from the group consisting of plasma, brain and urine.

18. (original) The method of claim 16 wherein the one or more glutathione S-transferase is human glutathione S-transferase pi.

19. (original) The method of claim 16 wherein the environmental toxin is a toxin or a metabolite thereof interferes with Complex I respiration in a cell's electron transport chain.

20. (original) The method of claim 16 wherein the environmental toxin is a toxin structurally similar to MPTP.

21. (original) The method of claim 16 wherein the environmental toxin is selected from the group consisting of MPTP, MPPX, plus rotenone and paraquat.

22. (original) The method of claim 16 wherein determining said first and second amounts of the one or more glutathione S-transferases involve determining the amount of mRNA encoding said the one or more glutathione S-transferases.

23. (original) The method of claim 16 wherein determining said first and second amounts of the one or more glutathione S-transferases involve the step of determining said glutathione S-transferase by the method selected from the group consisting of: radioimmunoassay, enzyme immunoassay and immunoflurometric immunoassay.

24. (original) The method of claim 23 wherein determining the amount of mRNA encoding said at least one glutathione S-transferases is determined using a primer selected from the group consisting of: SEQ ID NOS: 29-31, 33-35, 37-39, 41-43, 45-47, 49-51, 53-55, 57-59, 61-63, 65-67, and 69-71.

25. (original) The method of claim 16 wherein determining said first and second amounts of the one or more glutathione S-transferases involves determining the level of enzymatic activity corresponding to the one or more glutathione S-transferases.

26. (withdrawn) A method to determine genetic susceptibility to an environmental toxin involving contacting a biological sample from a subject with a composition consisting essentially of one or more labeled probes each of which binds selectively to a region on mouse chromosome 1, from D1Mit113 to D1Mit293 under conditions in which one or more labeled probes form a stable hybridization complex with DNA in the region of mouse chromosome 1 from D1Mit113 to D1Mit293 and detecting the hybridization complex, wherein said hybridization complex is indicative of a genetic susceptibility to an environmental toxin.

27. (withdrawn) A method to determine the susceptibility of a subject to develop Parkinson's disease, the method comprising: contacting a biological sample from a subject with a composition consisting essentially of a plurality of labeled probes each of which selectively binds to a region of human Glutathione S-transferase pi within

a segment of human GSTP1 (chr11:69874218-69877056); GST mu (hGSTm4: chr1:110677671-110687021, hGSTm2: chr1:110689771-110696957, hGSTm3: chr1:110758175-110761973, hGSTm1:chr1:110709530-110715415; or GST alpha (hGSTa1:chr6:52658645-52670705, hGSTa2:chr6:52617245-52630341; hGSTa3:chr6:52763514-52776547, hGSTa4:chr6:52844814-52862163 under conditions which a plurality of labeled probes form stable hybridization complexes with a segment of human GSTP1 (chr11:69874218-69877056); GST mu (hGSTm4: chr1:110677671-110687021, hGSTm2: chr1:110689771-110696957, hGSTm3: chr1:110758175-110761973, hGSTm1:chr1:110709530-110715415; or GST alpha (hGSTa1:chr6:52658645-52670705, hGSTa2:chr6:52617245-52630341; hGSTa3:chr6:52763514-52776547, hGSTa4:chr6:52844814-52862163; and detecting the hybridization complex wherein said hybridization complex is indicative of increased susceptibility of a subject to develop Parkinson's disease.